

## Abstract

Proton-conducting electrolyte membrane with low methanol permeability and its use in fuel cells

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The present invention relates to a proton-conducting electrolyte membrane obtainable by a process comprising the steps:

- A) swelling a polymer film with a liquid comprising a vinyl-containing sulphonic acid and
- 10 B) polymerising the vinyl-containing sulphonic acid present in liquid introduced in step A).

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A membrane according to the invention is very versatile on account of its excellent chemical and thermal properties and may be used, in particular, as a polymer electrolyte membrane (PEM) in what are known as PEM fuel cells.